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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/690,993   | 10/17/2000  | John Eric Kleider    | GE04563             | 3158             |
| 22863  | 7590        | 06/29/2006           | EXAMINER            |                  |
| MOTOROLA, INC.<br>1303 EAST ALGONQUIN ROAD<br>1L01/3RD<br>SCHAUMBURG, IL 60196 |             |                      | WANG, TED M         |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2611                |                  |

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/690,993

Applicant(s)

KLEIDER ET AL.

Examiner

Ted M. Wang

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2005 amendment.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5,6,9-11 and 30 is/are allowed.
- 6) ☒ Claim(s) 1,7,8,12,13 and 22 is/are rejected.
- 7) ☐ Claim(s) 2-4,14-21 and 23-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/17/2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Arguments*

1. In view of the Appeal Brief filed on 9/21/2005, PROSECUTION IS HEREBY REOPENED. New ground rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. The indicated allowability of claims 1, 7 and 8 are withdrawn in view of the newly discovered reference(s) to US Bingham (US 6,035,000). Rejections based on the newly cited reference(s) follow.

3. Applicant's arguments, with respect to claim 12 and 13, filed on 9/21/2005, have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited reference to reasonably and properly meet the claimed limitations.

*Independent Claim 12*

- (1) *Applicants' argument* – “Polley et al. minimally fails to make known (or obvious) transmission of OFDM data over more than one user channel” as recited.

*Examiner's response –*

In response to applicant's argument as described in the above paragraph, Examiner cites Fig.1 element 15 and column 4 lines 11-18 in Polley's reference to show that Polley teaches above argued feature. Polley teaches that FIG. 1 illustrates an example communications system 10 in which the invention can be practiced according to one embodiment. The communications system 10 includes a service provider 40 that is **accessible by one or more subscribers (users) 15**. Generally, **the subscriber (user) 15 has the transmission/reception and data processing equipment enabling access to the service provider 40**.

Thus, for the explanation addressed in the above paragraph, the rejection under 35 U.S.C. 102(e) with Polley's reference is adequate.

***Claim Objections***

4. Claims 22-29 are objected to because of the following informalities:
- In claims 22, line 7-10, “receiver receives said OFDM data in each subchannel within said plurality of subchannels within said wideband channel at one of zero subchannel signal level, an intermediate subchannel signal level, and a maximum subchannel signal level” as recited, is indefinite, because claim 22

Art Unit: 2611

does not specify what are the value of the maximum level and intermediate level.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Polley et al. (US 6,363,109).

- With regard claim 12, Polley et al. discloses an orthogonal frequency-division multiplex (OFDM) communication system utilizing a plurality of subchannels, comprising:

producing a modulation profile of said wideband channel, wherein said modulation profile is responsive to a signal-to-noise ratio (SNR) for each subchannel in said plurality of subchannels within said wideband channel (column 7, line 53-column 8, line 5);

transmitting OFDM data in response to said modulation profile (column 7, line 53-column 8, line 5 and claim 1); and

wherein said transmitting activity transmits said OFDM data over more than one user channel (Fig.1 element 15 and column 4 lines 11-18).

- With regarding claim 13, Polley et al. further discloses wherein each of the user channels comprises at least one of said subchannels (column 4 lines 11-18).

7. Claims 1, 7, 8 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Bingham (US 6,035,000).

- With regard claim 22, Bingham discloses an orthogonal frequency-division multiplex (OFDM) communication system utilizing a plurality of subchannels, comprising:

an OFDM receiver configured to obtain a signal-to-noise ratio (SNR) for each subchannel in said plurality of subchannels within said wideband channel (column 13 lines 41-65); and

an OFDM transmitter (column 8 lines 64-67) in communication with said OFDM receiver and configured to transmit OFDM data so that said OFDM receiver receives said OFDM data in each subchannel within said plurality of

Art Unit: 2611

subchannels within said wideband channel (Fig.6 and 7, column 3 lines 48-55, column 8 line 64 – column 9 line 10) at one of zero subchannel signal level, an intermediate subchannel signal level, and a maximum subchannel signal level (Fig.6 and 7 and column 8 line 64 – column 9 line 10, where the restrict band 1.8-2.0 MHz, 3.5-4.0 MHz, 7.0-7.3 MHz and 10.0-10.05 MHz power levels are at zero, other frequency bands power level would be either at maximum or intermediate) in response to said SNR therein.

- With regard claim 1, which is a method claim related to claim 22, all limitation is contained in claim 22. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 7, Bingham further discloses iterating said producing and transmitting activities to track changes in said SNR in each subchannel of said plurality of subchannels within said wideband channel (column 13 line 49 – column 14 line 5).
- With regard claim 8, Bingham further discloses scanning said wideband channel; and determining said SNR for each of said subchannels in said plurality of subchannels within said wideband channel in response to said scanning activity (column 13 lines 41-65). Bingham teaches that the objective is to estimate the Signal-to-Noise ratio for each of the subchannels (column 13 lines 55-56), it is inherent that all subchannels in the wideband are scanned.

***Allowable Subject Matter***

8. Claims 5, 6, 9-11 and 30 are allowed.

9. Claims 2-4, 14-21 and 23-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach a method of orthogonal frequency-division multiplex (OFDM) communication via a plurality of subchannels within a noncontiguous wideband channel, said method comprising receiving a reference signal transmitted over each subchannel in said plurality of subchannels within said wideband channel and determining an impeded subchannel each of said subchannels in which said SNR is less than said first least SNR threshold and greater than or equal to a second least-SNR requirement.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang  
Examiner  
Art Unit 2611

Ted M. Wang

  
**CHIEH M. FAN**  
**SUPERVISORY PATENT EXAMINER**